

PRE-NESTING BEHAVIOR OF THE SWALLOW-TAILED KITE (*ELANOIDES FORFICATUS*), INCLUDING INTERFERENCE BY AN UNMATED MALE WITH A BREEDING PAIR

by

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Snyder (1974) has described the breeding biology of the Swallow-tailed Kite (*Elanoides forficatus*). My observations of their pre-nesting behavior, made while staying at the Archbold Biological Station at Lake Placid, Florida, confirm his on copulations, courtship feeding, and nest-building. I report two aspects of behavior, one, the activities of an unmated male and the other relating to courtship feeding, that have not been reported previously, or at least not described in detail as far as I am aware. My observations were made between 16 March and 1 April 1979 at Parker's Island, Highland County, Florida, a colony known to have been in existence for at least 25 years. Past nests, from local reports, were located in the tops of tall slash pines (*Pinus elliotii*) as were two of the three nests in 1979. A third nest was apparently located in a swamp (bayhead) located 1.1 km away. The colony consisted of seven individuals, three pairs and an unmated male. The two pairs in the pines nested close to one side of a road and did their courting and perching on bare trees on the other. This situation was favorable to making observations, and I did not use a blind. Determination of sex was possible during much of the first 90 to 120 min. of a day, when the females spent most of their time perching on the dead trees where they were subject to copulations and courtship feedings.

Activities of an Unmated Male

Intrusions of an unmated male (hereafter designated IM for intruding male) were largely upon pair A. Pair A completed a nest 10 days later than the other two pairs of the colony. The latter became relatively inactive once incubation began. The intrusions of IM involved conflicts with pair A and interference with copulation, courtship feeding, and nest building.

Copulations. IM interfered with copulation 14 times. On 18 March, when in flight, IM knocked male A (MA) from the back of female A (FA) twice in 13 min. But physical interference was not always needed. On 26 March MA mounted FA five times in succession, breaking away each time when IM circled within 5 m. The intruding male tried to copulate with FA four times. She never assumed her horizontal invitation pose, and all he was able to do was to alight on or brush over her back, momentarily.

Courtship Feedings. As with the copulations, interference took two forms, with IM either trying to prevent MA from feeding FA (N=3) or to feed her himself (N=11). On 27 March IM swooped and knocked MA away two times in succession when the latter was about to feed his mate. On the following day he knocked FA from her perch after she had received an anole (*Anolis carolinensis*) from MA. Although IM carried anoles to feed FA, she never assumed her horizontal invitation pose and never accepted prey

from him. On one occasion female B (FB), who had just left off incubating, accepted an anole from the unmated male.

Interference with Nest Building. The chief interference of IM was to perch within 2 to 4 m of the nest. On 28 March he twice swooped at FA when she came in carrying nest material, forcing her the first time to leave and the second time to drop the stick she was carrying.

Conflicts. IM persisted in remaining close to pair A for hours each day. MA was also persistent in trying to drive him away. The result was that much time was taken up with the two kites circling over the nest area. This conflict circling differed from the circling seen at times when the other members of the colony gathered, by the tighter circles, more flapping of wings, and dives as MA partly closed his wings to dive on IM. Many *per-weat* calls accompanied these conflicts. I never saw physical contact although I twice saw the kites come within centimeters of each other. These conflicts diverted MA's attention from his mate and nest-building. Evidence for this was suggested by observations on 28 March when IM was absent between 06:25 and 08:08. During this interval MA copulated five times and fed his mate anoles nine times, the most attention that he had paid to her on any single morning. As soon as IM returned at 08:08, the diving and circling began again. I never saw aerial maneuvers that I could interpret as courtship although the question of their being so is raised both by Brown and Amadon (1968) and by Snyder (1974).

Courtship Feeding and Displacement Activity

Of 84 observed transfers of prey from the males to the females of the three pairs, the prey was an anole 6–7 cm in length in 83 and an unidentified object in one. All the females flattened with wings slightly out in an invitation pose (Snyder 1974) on seeing their mates coming and accepted the offerings readily. Three quarters of the observations were made on pair A. Male A brought anoles to his mate four times on 19 April between 06:48 and 07:27. Then at 07:34, for the only time by any male, he brought a small frog. When he alighted by his mate, she made no move to take it. Male A flew off, circled, and tried to feed her 12 times in 34 min., carrying the frog the whole time and shifting it from bill to feet and back. On four of these attempts he held his wings up and partly open for periods of 15 to 60 sec. The wings-out maneuver appeared to reflect a conflict situation in which the male was uncertain whether to stay or to fly. Although FA always accepted anoles from MA, she would not, it seemed, accept a frog. The unmated male circled near the perching tree on three occasions carrying an anole. FA assumed no invitation pose and refused his offering the two times he alighted beside her. He then rested with wings partly out in what I considered, for both males, to be a displacement activity.

Discussion

I have found no previous accounts of interference by an unmated bird with pre-nesting Swallow-tailed Kites. Skutch (1965) speaks of as many as six additional birds at a nest but gives no explanation. I saw extra birds by nest A but could see from lines of flight that they were from the other pairs nesting in the same colony, one pair coming from as far as a kilometer away. There were never more than seven kites at Parker's Island and one of these, the unmated male, behaved differently from the others. Snyder (1974) speaks of a single extra kite but gives no further details.

A question is whether female Swallow-tailed Kites always demand anoles in courtship feeding. Snyder (1974), in the two courtship feedings he describes, noted an anole in one and a lizard in the other.

Although Swallow-tailed Kites are not considered a threatened species, they have been extirpated from most of their range within the United States (Bent 1937). The Parker's Island colony, consisting of 20 pairs in the 1950s (local report), had dwindled to three pairs by 1979. Any factors that may contribute to further decline would seem worthy of study. The persistent time- and energy-consuming intrusions of the unmated male must have been a handicap to the mated pair. Yet interpretations are difficult. Pines suitable for nesting appeared to be scarce, and pair A might have experienced delay even without the intruder. Although I left Florida on 1 April, subsequent observation by Fred E. Lohrer showed that pair A did succeed in establishing a nest.

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JUVENILE PRAIRIE CHICKEN PREDATION BY MARSH HAWK

by

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While Marsh Hawks (*Circus cyaneus*) are known to prey upon Prairie Grouse (Grange, Wisconsin Grouse Problems. Wisc. Cons. Dept., Madison, 1948), no published account could be located in the literature detailing an observed attack. During a study of the reproductive ecology of Greater Prairie Chickens (*Tympanuchus cupido pinnatus*) in northwest Minnesota near Crookston, I observed the predation of a 29-day-old chick by an adult female Marsh Hawk.

At 19:15 on 24 July 1975 I located a radio-tagged hen with a brood of 4 chicks feed-